

ORIGINAL ARTICLE

Timely initiation of breastfeeding and its associated factors among Turkish mothers: a mixed model research

Ayşe Oflu (1), Siddika Songul Yalcin (2), Aysegul Bukulmez (1), Pelin Balikoglu (3), Esra Celik (4)

(1) Afyonkarahisar Health Sciences University, Department of Pediatrics, Afyonkarahisar, Turkey

(2) Hacettepe University, Institute of Child Health, Department of Social Pediatrics, Ankara, Turkey

(3) Malazgirt State Hospital, Department of Pediatrics, Muş, Turkey

(4) Susurluk State Hospital, Department of Pediatrics, Balıkesir, Turkey

ABSTRACT

Exploring the determinants of timely initiation of breastfeeding is necessary for planning efficient breastfeeding promotion programmes. The present study aimed to investigate the frequency and related factors of timely initiation of breastfeeding among Turkish mothers. This study was a cross-sectional, descriptive, mixed model study, which was carried out on mothers with healthy children up to 3 years old who presented to the paediatric clinic between 01 November 2019 and 30 December 2019 in a university hospital. Of the 307 participant mothers, the mean age was 28.3 ± 3.9 years. The frequency of timely initiation of breastfeeding was 70.7%. Significant associations were found between timely initiation of breastfeeding status and residence, type of delivery, type of anaesthesia, birth weight of babies, counselling on timely initiation of breastfeeding during antenatal care and consultant medical staff. In order to increase the breastfeeding rate in the first hour, spontaneous vaginal delivery should be supported and spinal/epidural anaesthesia method should be preferred in

cases where caesarean delivery is indicated. Other important steps to increase the ratio of timely initiation of breastfeeding are strengthening breastfeeding counselling services and the midwifery system.

KEYWORDS

Breastfeeding; Timely initiation; First hour.

INTRODUCTION

Timely initiation of breastfeeding (TIB) is defined as the placement of the newborn on the breast within the first hour of birth [1]. The widespread application of this practice, 1 of the 10 steps of successful breastfeeding, is extremely important in reducing neonatal deaths and illnesses all over the world [2,3]. The WHO and the UNICEF advise that children should be breastfed within the first hour of birth. Despite these recommendations, globally only about 42% of the newborns have the chance of TIB. This means that breastfeeding is delayed to newborns all over the world [1,4].

Many factors related to demographic, obstetric characteristics and counselling services interfere

Correspondence to:

Ayşe Oflu

Afyonkarahisar Sağlık Bilimleri Üniversitesi,
Afyonkarahisar, Turkey

Email: ayseoflu@gmail.com

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with TIB practice. Previous studies have reported that maternal education, parity, place, mode and type of delivery, gestational age and prenatal and postpartum counselling about breastfeeding were among the factors affecting the rate of TIB elsewhere [5-8]. Any attempt to interfere with the skin-to-skin contact, such as bathing and weighing, undermines this process [5,9].

This study aimed to explore the related demographic and obstetric factors with TIB of Turkish mothers and to investigate the adequacy of prenatal breastfeeding counselling on TIB.

MATERIALS AND METHODS

Study design

This cross-sectional, descriptive, mixed model study was carried out between 01 November 2019 and 30 December 2019 in a paediatric clinic of a university hospital that serves different socio-economic and sociocultural individuals. In order to better reveal the barriers to breastfeeding during the first hour, Creswell's [10] concurrent transformative mixed model research design was used.

Study sample

The study was carried out on mothers with healthy children aged up to 5 years admitted to the paediatric clinic. Mothers who refused to be included in the study, whose babies were born before 34 weeks of gestation, underwent medical intervention in the delivery room, were followed up in the neonatal intensive care unit and immigrant mothers who cannot speak Turkish were excluded from the study. Mothers who have a disease that prevents breastfeeding or use medication were also excluded from the study.

The number of mothers applying to the paediatric outpatient clinic monthly was noted as 1570 based on the past months' records. The rate of TIB in western Turkey was reported to be 76.3% as per the Turkish Demographic and Health Survey (TDHS) in 2018 [11].

Accompanied by these data, the sample size was determined as 307 in the 97% confidence

interval using the 'OpenEpi calculator' (<https://www.openepi.com/SampleSize/SSPropor.htm>). The parameters used were size of population (N): 3140; %frequency (p): 76.3% ± 5%; and %confidence limits (d): 5%.

Data collection

The survey consisted of 30 questions applied to the participants. It evaluated mothers' demographic and obstetric characteristics, to be informed during pregnancy about TIB, by whom they were informed and whether they breastfed in the first hour after delivery. The questionnaire was applied to the mothers by the face-to-face interview method. Quantitative and qualitative data were obtained simultaneously, and each interview ended in nearly 25-30 minutes. The mothers were asked to explain one question in detail: 'Why didn't you breastfeed your baby in the first hour after delivery?'

Statistical analysis

Categorical variables were specified as frequencies and chi-square test was used to compare categorical data between groups. Compliance of continuous variables to normal distribution was tested by the Shapiro-Wilk test. Independent group t-test was used to compare the data with normal distribution and Mann-Whitney U test was used to check whether the data were not normally distributed. Logistic regression analysis was carried out to find the adjusted odds ratio of factors related with delayed TIB. Statistical Package for the Social Sciences version 21.0 was used for analysis. $p < 0.05$ was accepted as statistically significant.

RESULTS

Of the 307 participants, the overall mean ages of the mothers and children were 28.3 ± 3.9 years and 28.1 ± 14.7 months, respectively. 43.6% of the children were female. The frequency of TIB was 70.7%. The socio-demographic characteristics of mothers are shown in Table 1.

The caesarean section ratio and preterm birth ratio were 57.9% and 29.6%, respectively. Table 2 shows the association between socio-

Table 1. Socio-demographic characteristics of mothers and children (N = 307).

Characteristics		
Age of mothers (years), mean \pm SD		28.3 \pm 3.9
Educational status of mothers, N (%)	\leq 8 years	122 (39.7)
	$>$ 8 years	185 (60.3)
Occupation of the mothers, N (%)	Employed	84 (27.4)
	Unemployed	223 (72.6)
Residence, N (%)	Rural	71 (23.1)
	Urban	236 (76.9)
Number of children, N (%)	1	67 (21.8)
	\geq 2	240 (78.2)
Child's sex, N (%)	Female	134 (43.6)
	Male	173 (56.4)
Age of children (months), mean \pm SD		28.1 \pm 14.7

N, number; SD, standard deviation.

demographic, obstetrics and healthcare service-related characteristics with TIB.

The binary logistic regression analysis of the factors associated with TIB is presented in Table 3.

The mothers who did not breastfeed timely were examined by a qualitative method, and the main obstacles are described below.

Lack of breastfeeding-related counselling

'I knew the importance of breastfeeding my baby, but I didn't know I had to breastfeed in the first hour. I don't remember if it was mentioned during my pregnancy. After birth, midwives who say you need to breastfeed were spinning around my head. Iuu! I thought I wouldn't be able to breastfeed as long as they insisted. it was annoying. At the first time, I didn't have any breast milk. They said your baby's blood sugar dropped and they gave him formula with a syringe. After three hours I succeeded to breastfeed. My milk came slowly'.

Due to the type of delivery

'I delivered my baby voluntarily by caesarean. I was afraid of normal birth. I had a very severe headache after birth. The pain made me crazy. So I didn't breastfeed my baby. So they gave

him formula. When my pain subsided, I tried to breastfeed the next day'.

Being under the influence of anaesthesia

'Unfortunately, I couldn't breast-feed my second one in the first hour because I was under the effect of general anaesthesia, I couldn't come to myself. About two hours had passed when I woke up, and I had terrible pain in my stomach. Nurses wanted my baby breastfeed and put her on my breast but it was 'nt easy. Because I could not stand upright. My baby was angry and crying. We finally succeeded, but the first hour had already passed'.

Lack of social support;

'No, I didn't breastfeed in the first hour. I held my baby and tried to breastfeed but I couldn't. My baby started to cry. Just in case, my mother put a bottle and formula in our birth bag. When my baby continued to cry, we prepared and fed. Of course, we kept it from midwives. Because they wanted me to breastfeed, but I couldn't. What could I do? My baby was crying because he was hungry'.

DISCUSSION

In the present study, the frequency of TIB was 70.7%, which is close to the ratio of TIB (76.3%) in

Table 2. Association between socio-demographic, obstetrics and healthcare service-related characteristics with initiation of breastfeeding in the first hour after birth.

	TIB		COR	95% CI
	Yes	No		
Age of mothers at birth, N (%)				
<35	203 (70.7)	84 (29.3)	1.03	(0.38-2.78)
≥35	14 (70.0)	6 (30.0)		
Educational status of mothers, N (%)				
≤8 years	86 (70.5)	36 (29.5)	0.98	(0.59-1.63)
>8 years	131(70.8)	54 (29.2)		
Occupation of the mothers, N (%)				
Employed	58 (69.0)	26 (31.0)	0.90	(0.52-1.55)
Unemployed	159 (71.3)	64 (28.7)		
Residence, N (%)				
Urban	178 (75.4)	58 (24.6)	2.52	(1.45-4.38)*
Rural	39 (54.9)	32 (45.1)		
Number of children				
1	48 (71.6)	19 (28.4)	1.06	(0.58-1.93)
≥2	169 (70.4)	71 (29.6)		
Child's gender, N (%)				
Female	90 (67.2)	44 (32.8)	0.74	(0.45-1.21)
Male	127 (73.4)	46 (26.6)		
Parity, N (%)				
1	36 (72.0)	14 (28.0)	1.08	(0.55-2.11)
≥2	181 (70.4)	76 (29.6)		
Gestational age at birth, N (%)				
Preterm	63 (69.2)	28 (30.8)	0.91	(0.53-1.55)
Others ^a	154 (71.3)	62 (28.7)		
Birth weight, N (%)				
<2500 g	33 (51.6)	31 (48.4)	0.34	(0.19-0.60)**
≥2500 g	184 (75.7)	59 (24.3)		
Type of delivery, N (%)				
Spontaneous vaginal delivery	113 (87.6)	16 (12.4)	5.03	(2.75-9.18)**
Caesarean section	104 (58.4)	74 (41.6)		
Type of anaesthesia, N (%) (N = 178)				
Spinal/ epidural	66 (77.6)	19 (22.4)	5.03	(2.61-9.70)**
General	38 (40.9)	55 (59.1)		
Counselling on TIB during antenatal care, N (%)				
Yes	146 (76.4)	45 (23.6)	2.06	(1.25-3.39)*
No	71 (61.2)	45 (38.8)		

Continued

	TIB		COR	95% CI
	Yes	No		
Consultant medical staff on TIB (N = 191)				
Midwives	59 (86.8)	9 (13.2)	8.90	(3.33-23.8)**
Family doctors/paediatrician	73 (81.1)	17 (18.9)	5.83	(2.44-13.9)**
Obstetrician	14 (42.4)	19 (57.6)	1	

CI: Confidence interval; COR: Crude odds ratio (unadjusted odds ratio); TIB: Timely initiation of breastfeeding.

^aTerm, postterm;

***p*-value < 0.001;

**p*-value < 0.05.

Table 3. Logistic regression analysis of factors associated with breastfeeding initiation in the first hour after birth.

Covariables		AOR	95% CI
Residence	Urban	4.39	(1.94-9.93)**
	Rural	1	
Birth weight	≥2,500 g	2.750	(1.35-5.58)*
	<2,500 g	1	
Type of delivery	Spontaneous vaginal delivery	7.93	(3.81-16.39)**
	Caesarean section	1	
Counselling on TIB during antenatal care	Yes	2.45	(1.34-4.46)*
	No	1	

AOR: Adjusted odds ratio; CI: Confidence interval; TIB: Timely initiation of breastfeeding.

1 = Reference.

***p*-value < 0.001, **p*-value < 0.05.

Western Turkey as per TDHS [11]. This ratio was much higher than that for the neighbouring country of Iran (32.2%) [12] and other countries, like India (21%) [13], Pakistan (8.5%) [14], Nigeria (34.7%) [15], South Sudan (48%) [16], and closer to Nepal (66.4%) [17] and Ethiopia (83.7%) [18]. The WHO classifies early initiation of breastfeeding rates as poor (0–29%), fair (30–49%), good (50–89%) and very good (90–100%) [1]. Turkey is now in the good category with 71.3%, while it was fair (49.9%) in average of all regions in 2013 [11]. Nevertheless, in our study, the presence of about 30% lack of TIB shows that there may still be a lack in support programmes even though Turkey is one of the countries that early supported the Baby-Friendly Hospital Initiative [19].

The relationship between TIB and residential features of mothers varies in different studies [20]. Similar to previous studies, the rate of onset

of breastfeeding in urban areas was found to be 4.4 times higher than that of rural areas in the present study [15,21,22]. The lack of adequate prenatal counselling in rural areas, myths related to breastfeeding and lack of social environmental support may be the reasons for this result. More functional and improving enforcement of the baby-friendly family medicine programme, which is being carried out since 2002 in Turkey, may reduce this difference [19].

Past research has found that caesarean delivery is a significant barrier for TIB [12]. Consistent with these studies, the current study found that vaginal delivery increased the likelihood of starting breastfeeding within the first hour compared to caesarean delivery by eight times. The effect of anaesthesia, respiratory stress in babies born via caesarean, pain after procedure and difficulties in positioning the infant and mother are the main

barriers for initiating breastfeeding early [7,22]. One of the important obstacles to TIB is that healthcare providers do not have time to provide proper breastfeeding support due to their task of stabilising mothers and being more busy with life-saving activities after caesarean delivery [23]. Despite the precautions taken, TDHS (2018) data unfortunately showed that almost one in two women (51.5%) give birth by caesarean section. Although the rate of increase in caesarean delivery has decreased since 1993, the frequency of caesarean continues to increase [11].

This study also shows that the frequency of TIB may increase by five times if obstetricians do not prefer general anaesthesia unless there is a medical indication. While there are many studies showing the negative effect of caesarean birth on TIB [22,24-26], to the best of our knowledge, very few studies have examined the effect of anaesthesia methods on breastfeeding. In 1988, Lie and Juul [27] determined that the frequency and length of breastfeeding advanced significantly after epidural analgesia compared to general anaesthesia. Kocaöz et al. [28] found that those who gave birth under spinal anaesthesia breastfed their newborn infants significantly earlier than those who had caesarean under general anaesthesia. In addition to the positive contribution of local anaesthesia to breastfeeding, it also supports mother–infant attachment by accelerating skin-to-skin contact [29]. Therefore, in cases where caesarean is indicated, preference of local anaesthesia methods by obstetricians and anaesthesiologists will support TIB and mother–infant attachment.

Gestational age has also been reported as one of the important factors associated with TIB in various studies. It has been shown that term babies are more likely to be breastfed in the first hour [30,31]. In our study, the week of birth was not among the factors associated with TIB. This may be due to the fact that hospitals where preterm babies are born are mostly tertiary care units and have baby-friendly neonatal intensive care units. In addition, the fact that babies born under 34 weeks were not included in the study may have masked the relationship.

Tilahun et al. [5] found that the frequency of TIB decreases in deliveries accompanied by relatives. A study from Ethiopia also reported grandmothers as the most influential individuals causing the practice of colostrum discarding [32]. Although the current study showed that all mothers gave birth in hospital and all births were accompanied by a healthcare professional, relatives who supported the mother were also shown to be influential in TIB. If the accompanying relatives do not have sufficient information on this subject, they may undermine TIB with misdirection and practices. For this reason, not only mothers but also grandmothers should be educated on this issue.

Previous research has shown that mothers who receive breastfeeding counselling during antenatal care visits are more successful in terms of TIB [5,7,8]. This study also showed that counselling during prenatal visits increased TIB by 2.5 times. Breastfeeding counselling is very valuable in terms of both providing the mothers with the right breastfeeding techniques and increasing their knowledge about breastfeeding [33]. In the current study, midwives were determined to be the most successful counselling provider of TIB. Competencies of midwives on antenatal care and breastfeeding have also been reported in previous studies [34,35]. It is obvious that strengthening the midwifery system in the healthcare system will be an important step in supporting breastfeeding in the first hour.

The limitation of this study is that it was conducted in a single centre. Also, since the data were obtained from mothers' reports, there may be biases, such as concealment, memory, exaggeration and evasion.

CONCLUSION

In conclusion, our results revealed that mothers mostly breastfed in the first hour. Despite attempts in this regard, approximately 30% of mothers' failure of TIB should not be underestimated. It is worrisome that caesarean births are still the leading factor in failure. The inadequacy of the steps taken in regard to this matter is obvious. Since the process of decreasing caesarean births

is progressing slowly, strengthening counselling access may even decrease caesarean rates. Because as mothers become conscious on breastfeeding, for instance, timely initiation, their decision about the way of birth may change and unnecessary caesarean births may decrease. Attempts to improve quality of breastfeeding counselling services and strengthening the midwifery system will be valuable steps.

CONFLICT OF INTEREST

The authors have no conflict of interest to declare.

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ETHICAL APPROVAL

The study was conducted in accordance with the principles of the Declaration of Helsinki and approved by Afyonkarahisar Health Sciences University ethics committee on 04.10.2019 with number 2011-KAEK-2. Written and verbal consent was obtained from all participants.

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